CLAIMS

What is claimed is:

1. A screw and rod fixation assembly for fixing a screw and a rod comprising:

a screw including a screw head;

a body portion including screw head receiving means for receiving said screw head and rod receiving means for receiving a rod therein, said rod receiving means being offset from said screw head receiving means; and

locking means for locking a rod within said rod receiving means.

2. The screw and rod fixation assembly according to claim 1, wherein said locking means has an engaged condition for engaging and maintaining the rod in position in said rod receiving means and an unengaged condition for enabling the rod to freely enter said rod receiving means.

3. The screw and rod fixation assembly according to claim 2, wherein said locking means includes a relieved wall for positioning said locking means in said unengaged condition.

4. The screw and rod fixation assembly according to claim 2, wherein said locking means includes a grooved wall for positioning said locking means in said engaged condition.

5. The screw and rod fixation assembly according to claim 4, wherein said grooved wall includes rod engaging means.

6. The screw and rod fixation assembly according to claim 5, wherein said rod engaging means is selected from the group consisting essentially of threads, a helical groove, and a wedge shape.

7. The screw and rod fixation assembly according to claim 1, wherein said locking means is a cam lock.

8. The screw and rod fixation assembly according to claim 7, wherein said cam lock includes a wedge shaped outer surface.

9. The screw and rod fixation assembly according to claim 8, wherein said wedge shaped outer surface further includes a locking tab.

10. The screw and rod fixation assembly according to claim 8, wherein said cam lock further includes extraction means for extracting said cam lock from said body portion.

11. The screw and rod fixation assembly according to claim 7, wherein said cam lock includes gripping means on an exterior surface of said cam lock for maintaining said cam lock in said body portion.

12. The screw and rod fixation assembly according to claim 11, wherein said cam lock gripping means includes threads.

13. The screw and rod fixation assembly according to claim 11, wherein said locking means includes a screw head seat.

14. The screw and rod fixation assembly according to claim 13, wherein said screw head seat is formed in a shape selected from the group consisting essentially of conical and spherical.

15. A rod receiving device comprising a body portion including screw receiving means for receiving a screw therein and rod seating means offset from said screw receiving means within said body portion and locking means for locking a rod within said body portion.

16. The rod receiving device according to claim 15, wherein said locking means has an engaged condition for engaging and maintaining the rod in position in said rod receiving means and an unengaged condition for enabling the rod to freely enter said rod receiving means.

17. The rod receiving device according to claim 16, wherein said locking means includes a grooved wall for positioning said locking means in said engaged condition.

18. The rod receiving device according to claim 16, wherein said engaged condition includes a grooved wall.

19. The rod receiving device according to claim 18, wherein said grooved wall includes rod engaging means.

20. The rod receiving device according to claim 19, wherein said rod engaging means is selected from the group consisting essentially of threads, a helical groove, and a wedge shape.

21. The rod receiving device according to claim 1, wherein said locking means is a cam lock.

22. The rod receiving device according to claim 21, wherein said cam lock includes a wedge shaped outer surface.

23. The rod receiving device according to claim 22, wherein said wedge shaped outer surface further includes a locking tab.

24. The rod receiving device according to claim 22, wherein said cam lock further includes extraction means for extracting said cam lock from said body portion.

25. The rod receiving device according to claim 21, wherein said cam lock includes gripping means on an exterior surface of said cam lock for maintaining said cam lock in said body portion.

26. The rod receiving device according to claim 25, wherein said cam lock gripping means includes threads.

27. The rod receiving device according to claim 25, wherein said screw head receiving means is an aperture having gripping means.

28. The rod receiving device according to claim 27, wherein said aperture gripping means includes threads capable of mating said threads of said cam lock.

29. Rod receiving means for receiving and maintaining a rod therein, said rod receiving means comprising a body portion including screw head receiving means for receiving a screw head and a rod seat for receiving a rod therein, said rod seat being offset from the screw head receiving means.

30. The rod receiving means according to claim 29, wherein said body portion includes gripping means for gripping and maintaining the screw head within said body portion.

31. The rod receiving means according to claim 30, wherein said gripping means includes threads.

32. A medical device comprising:

a screw including a screw head;

a body portion including screw head receiving means for receiving said screw head and rod receiving means for receiving a rod therein, said rod receiving means being offset from said screw head receiving means; and

locking means for locking a rod within said body portion.

33. The medical device according to claim 32, wherein said locking means has an engaged condition for engaging and maintaining the rod in position in said rod receiving means and an unengaged condition for enabling the rod to freely enter said rod receiving means.

34. The medical device according to claim 33, wherein said locking means includes a relieved wall for positioning said locking means in said unengaged condition.

35. The medical device according to claim 33, wherein said locking means includes a grooved wall for positioning said locking means in said engaged condition.

36. The medical device according to claim 35, wherein said grooved wall includes rod engaging means.

37. The medical device according to claim 36, wherein said rod engaging means is selected from the group consisting essentially of threads, a helical groove, and a wedge shape.

38. The medical device according to claim 32, wherein said locking means is a cam lock.

39. The medical device according to claim 38, wherein said cam lock includes a wedge shaped outer surface.

40. The medical device according to claim 39, wherein said wedge shaped outer surface further includes a locking tab.

41. The medical device according to claim 38, wherein said cam lock further includes extraction means for extracting said cam lock from said body portion.

42. The medical device according to claim 38, wherein said cam lock includes gripping means on an exterior surface of said cam lock for maintaining said cam lock in said body portion.

43. The medical device according to claim 42, wherein said cam lock gripping means includes threads.

44. The medical device according to claim 32, wherein said locking means includes a screw head seat.

45. The medical device according to claim 44, wherein said screw head seat is formed in a shape selected from the group consisting essentially of conical and spherical.

46. An insert element comprising:

a body portion including screw head receiving means for receiving a screw head and rod receiving means for receiving a rod therein, said rod receiving means being offset from said screw head receiving means; and

locking means for locking a rod within said body portion.

47. The insert element according to claim 46, wherein said locking means has an engaged condition for engaging and maintaining the rod in position in said rod receiving means and an unengaged condition for enabling the rod to freely enter said rod receiving means.

48. The insert element according to claim 47, wherein said locking means includes a relieved wall for positioning said locking means in said unengaged condition.

49. The insert element according to claim 47, wherein said locking means includes a grooved wall for positioning said locking means in said engaged condition.

50. The insert element according to claim 49, wherein said grooved wall includes rod engaging means.

51. The insert element according to claim 50, wherein said rod engaging means is selected from the group consisting essentially of threads, a helical groove, and a wedge shape.

52. The insert element according to claim 46, wherein said locking means is a cam lock.

53. The insert element according to claim 52, wherein said cam lock includes a wedge shaped outer surface.

54. The insert element according to claim 53, wherein said wedge shaped outer surface further includes a locking tab.

55. The insert element according to claim 52, wherein said cam lock further includes extraction means for extracting said cam lock from said body portion.

56. The insert element according to claim 52, wherein said cam lock includes gripping means on an exterior surface of said cam lock for maintaining said cam lock in said body portion.

57. The insert element according to claim 56, wherein said cam lock gripping means includes threads.

58. The insert element according to claim 46, wherein said locking means includes a screw head seat.

59. The insert element according to claim 58, wherein said screw head seat is formed in a shape selected from the group consisting essentially of conical and spherical.

60. A locking mechanism for locking a rod within an assembly, said locking mechanism comprising;

a lock body including a relieved portion for allowing entry of a rod into an assembly and a grooved portion for engaging and maintaining the rod within the assembly.

61. The locking mechanism for locking a rod within an assembly 60, wherein said grooved wall includes rod engaging means.

62. The locking mechanism for locking a rod within an assembly 60, wherein said rod engaging means is selected from the group consisting essentially of threads, a helical groove, and a wedge shape.

63. A rod receiving device comprising a body portion including screw receiving means for receiving a screw therein and rod seating means offset from said screw receiving means within said body portion.

64. The rod receiving device according to claim 63, wherein said rod seating means is substantially curvate in shape.

65. The rod receiving device according to claim 63, wherein said rod seating means is smaller than the diameter of the rod being placed therein.

66. The rod receiving device according to claim 63, wherein said road seating means is located substantially perpendicular to an axis bisecting said screw receiving means.